

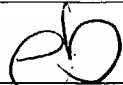


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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,081	11/28/2001	John Charles Clark	57255US002	6096
32692	7590	04/16/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			MAYEKAR, KISHOR	
			ART UNIT	PAPER NUMBER
			1753	
DATE MAILED: 04/16/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/997,081	Applicant(s) CLARK ET AL.	
	Examiner Kishor Mayekar	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. In the remarks filed January 30, 2004, Applicant points out that the Office Summary statement asserting that claims 11-14 are withdrawn from consideration is inconsistent with the restriction of claims 12-14 of Group II. However, in pages 2-3 of the detailed action, it is clear that claims 12-14 are withdrawn from the consideration by the examiner and only claims 1-11 are examined even though the Office Summary statement has a typo error made on the withdrawn claims.

Also, in the remarks, Applicant fails to reply to the requirement for the restriction the affirmation of the election even though the requirement is traversed (emphasis added).

Response to Arguments

2. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 10 and 11, the phrase "capable of" when using in a claim process is indefinite or confusing as whether the fiber construction has or has not the recited wicking ability (emphasis added).

Claim Rejections - 35 USC § 103

5. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over BOCCACCINI et al. ("Use of electrophoretic deposition in the processing of fibre reinforced ceramic and glass matrix composites: a review", Composites: Part A: applied science and manufacturing, Elsevier Science Publishers, B.V., Amsterdam,

NL, Vol. 32, No. 8, August 2001, pp. 997-1006) in view of BETT et al. (5,840,414). BOCCACCINI's invention, a reference cited in the last Office action, discloses in the above article a case of Ni-coated carbon fiber reinforced alumina matrix composite by electrophoretic deposition. The reference further discloses that the electrophoretic deposition comprises all the steps as claimed wherein the fiber is the cathode, the alumina particles possess a net positive surface charge, and the suspension is aqueous (see section 3 in pages 1002-1003). The reference discloses in Fig. 4 a case with silica particles wherein the fiber acts as the positive electrode when the particles in the suspension are negatively charged. The difference between the reference and the above claims is the reference is silent on the hydrophilic property of the ceramic-coated fiber. BETT shows that when a porous carbon plate is coated with aluminum oxide or silica particles the coated carbon plate becomes highly wettable by water (see Disclosure of the Invention). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the reference's teachings as shown by BETT because BETT shows that the pores in the carbon body when filled with metal oxide particles render the carbon body hydrophilic.

As to the subject matter of claim 8, the reference discloses in Table 1 an overview of the published work dealing with the application of the electrophoretic deposition technique for the fabrication of fiber reinforced ceramic and glass matrix composites. As such, the selection of one type of carbon fiber for another would have been within the skill of ordinary skill in the art.

6. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over ILLSTON et al. (5,54,271) in view of BETT '414. ILLSTON's invention is directed to method of manufacturing a composite material using electrophoresis. ILLSTON discloses that the method comprises immersing a matt of carbon-coated ceramic fibers in a silica sol or an alumina sol and permeate the fiber matt with charged sol particles by electrophesis (col. 2, lines 20-44). The difference between the reference and the above claims is the reference is silent on the hydrophilic property of the sol particle-permeated fiber matt. BETT shows that when a porous carbon plate is coated with aluminum oxide or silica particles the coated carbon plate becomes highly wettable by water (see Disclosure of the Invention). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified ILLSTON's

teachings as shown by BETT because BETT shows that the pores in the carbon body when filled with metal oxide particles render the carbon body hydrophilic.

As to the subject matter of claim 8, the substitution of one type of carbon fiber for another would have been within the skill of ordinary skill in the art as they are both fibers.

Response to Arguments

7. Applicant's arguments filed January 30, 2004 have been fully considered but they are not persuasive because of the new grounds of rejection as set forth in the paragraphs above.

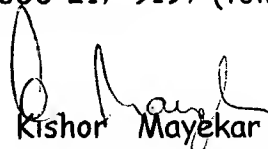
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax

Art Unit: 1753

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kishor Mayekar
Primary Examiner
Art Unit 1753